

IN THE CLAIMS

Re-write Claims 1 and 2 as follows. Add new Claims 5-11.

1. (currently amended) A method for error detection and correction (EDC) in transferring data in a packet of bytes from a memory module to a requesting device comprising the steps of:

defining for each byte of the packet to have an EDC code portion and a data portion, wherein each EDC code portion is a distributed portion of a complete EDC code;

storing said data portion and said EDC code portion of each byte of the packet in the memory module;

reading out said data portion and said EDC code portion of each byte of the packet from said memory module;

forwarding said data portion of each byte of the packet read from the memory module to said requesting device;

storing said EDC portion of each byte of the packet read from the memory module, and sending each said EDC portion to an EDC functional block when the a complete EDC code is obtained;

copying said data portion of each byte of the packet read from the memory module, said data and sending each said data portion to said EDC functional block; and

performing error checking and correction in said EDC functional block when said EDC functional block receives the a complete EDC code.

2. (currently amended) A method as in claim 1,

further comprising the following steps wherein when an error is detected in said EDC functional block, said block causes:

setting a flag and correcting said data;
writing the correct data back to said memory module; and
generating an interrupt to said requesting device for a later retransmission.

3. (original) A method as in claim 1, wherein each byte of a packet has 8 bits of data and 1 bit of a 8 bit EDC code and said EDC code is distributed among 8 bytes of each packet.

4. (original) A method as in claim 1, wherein said forwarding of said data portion will not begin until an entire packet is received and said entire packet is checked and corrected for error.

5. (new) A method for error detection and correction (EDC) comprising:

generating a complete EDC code in response to a data packet;
distributing the complete EDC code among the data packet to create a plurality of bytes, each including a data portion from the data packet and an EDC code portion from the complete EDC code;
storing the bytes in a memory module;
retrieving the bytes from the memory module;
forwarding the data portions of the bytes retrieved from the memory module to a requesting device;
providing the data portions of the bytes retrieved from the memory module to an EDC functional block;

providing the EDC code portions of the bytes retrieved from the memory module to the EDC functional block; and

performing error checking and correction in the EDC functional block upon receiving the complete EDC code from the provided EDC code portions.

6. (new) The method of Claim 5, further comprising generating syndrome bits in response to the data portions provided to the EDC functional block.

7. (new) The method of Claim 5, wherein the step of forwarding the data portions is performed in parallel with the steps of: providing the data portions to the EDC functional block, providing the EDC code portions to the EDC functional block, and performing error checking and correction in the EDC functional block.

8. (new) The method of Claim 7, further comprising performing the following steps if the EDC functional block detects an error:

correcting the data portions of the bytes retrieved from the memory module;

writing the corrected data portions to the memory module; and

generating an interrupt to the requesting device to arrange for a data retransmission.

9. (new) The method of Claim 5, further comprising storing the EDC code portions of the bytes retrieved from the memory module to create the complete EDC code.

10. (new) The method of Claim 5, further comprising

only forwarding the data portions of the bytes retrieved from the memory module to the requesting device if the EDC functional block determines there are no errors in the data portions retrieved from the memory module.

11. (new) The method of Claim 10, further comprising performing the following steps if the EDC functional block determines there is an error in the data portions retrieved from the memory module:

 correcting the data portions of the bytes retrieved from the memory module, thereby creating corrected data portions; and then,

 forwarding the corrected data portions to the requesting device; and

 writing the corrected data portions to the memory module.